Remarks

In view of the above amendments and the following remarks, reconsideration of the rejections and further examination are requested.

Claims 6 and 11 have been provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 2 and 3 of Application No. 11/594,161 in view of Harumoto (US 6,801,707) and claims 2 and 3 of Application No. 11/594,137 in view of Harumoto.

Without acquiescing to the provisional obviousness-type double patenting rejections, it is noted that Application Nos. 11/594,161 and 11/594,137 were filed after the filing of the present application. Therefore, in accordance with M.P.E.P. §804(I)(B)(1), when the provisional obviousness-type double patenting rejections become the only remaining rejections in this application, the provisional obviousness-type double patenting rejections should be withdrawn and the application should be permitted to issue as a patent without a terminal disclaimer. As a result, the Applicants hereby request that the provisional obviousness-type double patenting rejections be held in abeyance.

Claims 6 and 11 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Naimpally (US 5,619,337) in view of Oishi (US 6,141,490) and Harumoto.

Claims 6 and 11 have been amended so as to further distinguish the present invention, as recited therein, from the references relied upon in the rejection. As a result, the rejection is submitted to be inapplicable to the claims for the following reasons.

Claim 6 is patentable over the combination of Naimpally, Oishi and Harumoto, since claim 6 recites an information recording apparatus including, in part, a second encoding section operable to perform system-encoding by multiplexing a video elementary stream and an audio elementary stream to generate a system stream according to a first format (TS), wherein

the first format (TS) is allowed to have a constrained format used for converting the system stream from the first format (TS) to a second format (PS),

the first format (TS) has a structure for storing data segmented in first packets, the second format (PS) has a structure for storing data segmented in packs, and the pack is larger than the first packet in size,

the first packet stores segmented data of a second packet,

the second packet stores video information or audio information, the second packet storing the audio information including at least one audio frame, and

according to the constrained format,

a predetermined number of first packets including either the video information or the audio information are grouped and managed as a multiplexing unit, and a total payload data size of first packets managed in the multiplexing unit is smaller than a payload data size of the pack,

the multiplexing unit is a processing unit to convert the first format (TS) to the second format (PS), and

a first one of complete audio frames in the multiplexing unit including only the audio information is a first one of audio frames in a payload of the second packet, wherein the first format is MPEG-TS, the second format is MPEG-PS and the second packet is a PES packet. The combination of Naimpally, Oishi and Harumoto fails to disclose or suggest the constrained format as recited in claim 6.

Naimpally discloses an MPEG transport encoding/decoding apparatus that includes tuner, demodulation and error correction circuitry 210, a digital VCR interface processor 214, and a digital VCR 216. The circuitry 210 provides a signal D that includes several transport packets for various program transport streams P0, P1 and P2 as illustrated in Figure 3A. When, for example, the transport stream P0 is selected to be recorded, the digital VCR interface processor 214 modifies the transport stream P0 for recording as illustrated in Figure 3B, and the digital VCR 216 then formats the modified transport stream P0 as illustrated in Figure 3C and records the formatted transport stream P0 onto a digital video tape. (See column 6, line 1 – column 7, line 2 and Figures 2-3C).

In the rejection, it is indicated that Naimpally discloses a predetermined number of first packets grouped and managed as a multiplexing unit. Regarding this, Figures 3A-3D of Naimpally illustrate selecting the program transport stream P0 from a multiplexed program stream (P0, P1, P2), which includes transport packet packets 312, 314 and 316, to be recorded on a digital video tape. However, it is clear that Naimpally fails to disclose or suggest grouping and managing a predetermined number of first packets including either video information or audio information as a multiplexing unit, the first packet storing segmented data of a PES packet, the multiplexing unit being a processing unit to convert MPEG-TS to MPEG-PS, and a first one of

complete audio frames in the multiplexing unit including only the audio information is a first one of audio frames in a payload of the PES packet, as now recited in claim 6.

According to the above-mentioned recitation in claim 6, each multiplexing unit includes either video information or audio information, and not both video information and audio information. One of the benefits of the multiplexing unit having this constrained format is that MPEG-TS is able to be easily and quickly converted to MPEG-PS. On the other hand, if the multiplexing unit included both video and audio information, a converting apparatus would have to divide the multiplexing unit, gather either the video or audio information from a plurality of the multiplexing units, fill each pack with only one of video information or audio information, and calculate a header for each pack. As a result, the converting apparatus also would have to perform a re-encoding for the information, and therefore, cannot perform an easy and quick conversion.

Further, as admitted in the rejection, Naimpally also fails to disclose or suggest a constrained format for converting a system stream from MPEG-TS to MPEG-PS, and according to the constrained format, a first one of complete audio frames in the multiplexing unit that is a first one of audio frames in a payload of a PES packet. One of the benefits of this feature is that it is not necessary to analyze the internal structure of the audio stream, which simplifies the conversion process. As a result, Oishi and/or Harumoto must disclose or suggest these features in order for the combination of Naimpally, Oishi and Harumoto to render claim 6 obvious.

Regarding Oishi, it discloses a data multiplexing method that is able to prevent the failure (e.g., overflow or underflow) of a buffer memory of a decoding apparatus. The data multiplexing method is disclosed as being applicable to an MPEG 1 system stream and an MPEG 2 program stream, or to an MPEG 2 transport stream. Further, Oishi discloses the basic structure of a multiplexed stream. (See column 1, line 60 - column 4 line 4; column 11, line 50 - column 12, line 26; column 15, line 2 - column 16, line 15; and Figures 2 and 7-9).

In the rejection, Figure 2 of Oishi is relied upon as disclosing a first one of complete audio frames in the multiplexing unit is a first one of audio frames in a payload of a PES packet. However, as illustrated in Figure 2, the first pack has packets of both video data and audio data, and the number of packets included in the pack is not limited. On the other hand, claim 6, as amended, specifically recites that the multiplexing unit includes only video information or audio information.

Further, claim 6 recites that the multiplexing unit including audio information has a first complete frame this is a first one of audio frames in a payload of a PES packet. However, Oishi fails to disclose or suggest the complete audio frame in the multiplexing unit or the PES packet. This is apparent because "AUDIO" and "VIDEO" in Figure 2 identify the type of packet and column 2, lines 5-15 of Oishi indicates that Figure 2 does not illustrate an audio/video frame, but the structure of a multiplexed stream including packs and packets. Therefore, Oishi fails to address the deficiencies of Naimpally. As a result, Harumoto must disclose or suggest these features.

Regarding Harumoto, it discloses an MPEG system stream composed of a pack including one or more packets. Each of the packets includes a pack header 11, a packet header 12 and a payload 13. The payload 13 is either video data or audio data. (See column 2, lines 15-44 and Figure 1).

In the rejection, the packets of Harumoto are relied upon as disclosing the claimed predetermined number of first packets containing either video information or audio information. However, Harumoto fails to disclose or suggest the above-discussed features of claim 6 that are missing from Naimpally and Oishi. As a result, claim 6 is patentable over the combination of Naimpally, Oishi and Harumoto.

Regarding claim 11, it is patentable over the combination of Naimpally, Oishi and Harumoto for reasons similar to those set forth above in support of claim 6.

Because of the above-mentioned distinctions, it is believed clear that claims 6 and 11 are allowable over the references relied upon in the rejection. Furthermore, it is submitted that the distinctions are such that a person having ordinary skill in the art at the time of invention would not have been motivated to make any combination of the references of record in such a manner as to result in, or otherwise render obvious, the present invention as recited in claims 6 and 11. Therefore, it is submitted that claims 6 and 11 are clearly allowable over the prior art of record.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance. The Examiner is invited to contact the undersigned by telephone if it is felt that there are issues remaining which must be resolved before allowance of the application.

Respectfully submitted,

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